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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,734	10/18/2004	Davor Protic	046972-0102	2536
22428	7590	06/29/2006	EXAMINER	
FOLEY AND LARDNER LLP			LEE, SHUN K	
SUITE 500			ART UNIT	
3000 K STREET NW			2884	
WASHINGTON, DC 20007			PAPER NUMBER	

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

B1

**Office Action Summary**

Application No.

10/511,734

Applicant(s)

PROTIC ET AL.

Examiner

Shun Lee

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20041018, 20050104</u> . | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***National Stage Application***

***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.437 and PCT Rule 11.13(m) because reference character "5" has been used to designate both metallic layer and grooves. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

2. The disclosure is objected to as failing to comply with 37 CFR 1.435 and PCT Rule 5.1(a)(iv) since the disclosure lacks a brief description of the figures in the drawings.
3. The disclosure is also objected to because of the following informalities: the specification lacks section headings (37 CFR 1.435 and PCT Rule 5.1(c)). Appropriate correction is required.

***Claim Objections***

4. Claims 2 and 5 are objected to because of the following informalities:
- (a) in claim 2, "the crystalline structure" on lines 2-3 should probably be --a crystalline structure--; and
  - (b) in claim 5, "the crystalline region" on line 2 should probably be --a crystalline region--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 6, the phrase "in particular" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. In addition, the phrase "by particular preference" renders the claim indefinite because it is unclear whether the limitations following that phrase are part of the claimed invention.

The term "substantially less" in claim 8 is a relative term which renders the claim indefinite. The term "substantially less" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The

specification fails to provide a criteria for determining what constitutes a substantially lower electrical conductivity relative to the amorphous layer.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamacher *et al.* (Performance of position -sensitive germanium detectors in nuclear reaction experiments, Nuclear Instruments & Methods in Physics Research, Vol. A295, no. 1-2 (October 1990), pp. 128-132) in view of Luke *et al.* (Amorphous Ge bipolar blocking contacts on Ge detectors, IEEE Transactions on Nuclear Science, Vol. 39, no. 4 (August 1992), pp. 590-594).

In regard to claims **1-5, 7, and 8** (in so far as understood), Hamacher *et al.* disclose (Fig. 1) a camera with a position-sensitive detector for measuring charged particles comprising a surface region which is formed by a structured metallic layer consisting of Al (aluminum), characterized in that the structure of the metallic layer is continued into a germanium crystalline semiconductor structure. The detector of Hamacher *et al.* lacks a germanium (or silicon) amorphous layer applied on the crystalline structure, wherein the amorphous layer provides an electrical conductivity, which is substantially less than the conductivity of the material disposed beneath the amorphous layer. Luke *et al.* teach (section 1) to apply an undoped germanium amorphous layer on a p- or n-doped germanium crystalline semiconductor structure, in order to obtain good bipolar blocking contacts. It should be noted that doping a semiconductor increases the number of carriers available for conduction. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to apply an undoped germanium amorphous layer on the doped germanium crystalline semiconductor structure in the detector of Hamacher *et al.*, in order to obtain good bipolar blocking contacts.

In regard to claim **6** which is dependent on claim 1 in so far as understood, Hamacher *et al.* also disclose (section 3.1, last paragraph on the right column on pg. 129) that the structure is formed from segments, which provide a mutual spacing of less than 200  $\mu\text{m}$ , in particular, a spacing of less than 100  $\mu\text{m}$ , by particular preference less than 20  $\mu\text{m}$ .

In regard to claim **9** which is dependent on claim 1, Hamacher *et al.* in view of Luke *et al.* is applied as in claim 1.

It is noted that claim 9 recites that the camera is a tomograph or compton camera which appears to be mere statements of purpose or use and does not appear to imply any additional structural limitations of the camera with a position-sensitive detector as recited in claim 1. Applicant is advised that should claim 1 be found allowable, claim 9 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2884

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SL

  
CONSTANTINE HANNAHEER  
PRIMARY EXAMINER